

01



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,571	07/22/2003	Masato Furuya	25581	6555
20529	7590	02/09/2006	EXAMINER	
NATH & ASSOCIATES 112 South West Street Alexandria, VA 22314			MOON, SEOKYUN	
			ART UNIT	PAPER NUMBER
			2675	
DATE MAILED: 02/09/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/623,571	Applicant(s) FURUYA, MASATO	
	Examiner Seokyun Moon	Art Unit 2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>08/05/2003</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. **Claim 1** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim limitation "*a second shift register to sequentially generate and supply second row select pulses that resets pixels to a reset voltage to the row electrodes, in part or in whole, of respective horizontal blanking periods of the vertical scan period in response to a second scan start signal*" is not explained and described in the specification of the application. As originally filed, the specification does not disclose above claim limitation.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards et al. (U.S. Pub. No. 2003/0016202 A1, herein after referred to as "Edwards") in view of Imamura (U.S. Pub. No. 2002/0011994 A1, herein after referred to as "Imamura").

Edward [fig. 1] teaches an active matrix LCD ("AMLCD") having column electrodes ("*column address electrodes 16*") for display signals ("*data signals*");

row electrodes ("*row address electrodes 14*") for scanning ("*selection signal*"), the row electrodes being orthogonal to the column electrodes;

pixels ("*pixels 10*") arranged in a matrix at intersections of the column and row electrodes;

a column driver ("*column driver circuit 35*") to sequentially supply, in each horizontal scan period ("*row address period T_L* "), display signals to the column electrodes; and

a row driver ("*row driver circuit 30*") to sequentially supply row select pulses ("*selection signal*") to the row electrodes so that the display signals are written in a row of the pixels [*par. (0042)*], the row driver comprising:

a first shift register ("*digital shift register*") to sequentially generate and supply first row select pulses ("*selection signal*") to the row electrodes in respective display signal periods (a portion of the "*field period T_f* " in which the row electrodes are selected) of a vertical scan period ("*field period T_f* ").

Edwards does not teach the first register generate the select pulses in response to a first scan start signal.

However, Imamura [*fig. 10*] teaches the first register ("*first shift register*") in the row driver ("*scan electrode driver 220*") to scan or to select row electrodes in response to a scan start signal ("*scan start signal YD*") [*par. (0048) lines 7-9*].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to enable Edwards' register to receive a scan start signal and to select the row electrodes in response to a scan start signal, as taught by Imamura, to provide optimal timing for the driving of LCD device.

5. **Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards and Imamura as applied to claim 1 above, and further in view of Kondoh (U.S. Pub. No. 2002/0158831 A1, herein after referred to as "Kondoh").

Edwards as modified by Imamura does not teach a column driver comprising a lever setter and an output unit configured to turn on all switches of the column driver, and the row driver comprising a row selector.

However, Kondoh teaches a column driver (a combination of "*driving voltage waveform control circuit 22*" and "*signal voltage waveform generating circuit 24*") comprising a lever setter ("*driving voltage waveform control circuit 22*") configured to wholly set a horizontal blanking period ("*reset period*") of the horizontal scan period (a combination of "*selection period*", "*non-selection period*", and "*reset period*") as a period to provide the reset voltage [*fig. 12*] [*par. (0009) lines 11-12*].

Kondoh [*fig. 9*] [*fig. 12*] also teaches a row driver ("*scanning voltage waveform generating circuit 23*") comprising a row selector configured to sequentially provide, in cooperation with the row driver, row select pulses to select the row electrodes

(*"scanning electrode"*) one after another for each horizontal scan period (a combination of *"selection period"*, *"non-selection period"*, and *"reset period"*) including a first period (*"selection period"* and *"non-selection period"*) during which the row driver provides the column electrodes with the display signals having image information and a second period (*"reset period"*) during which the output unit (a portion of a combination of *"driving voltage waveform control circuit 22"* and *"signal voltage waveform generating circuit 24"*) provides the column electrodes with the reset voltage.

Kondoh does not teach expressly the output unit configured to turn on all switches of the column driver in a reset period during which display signals have no image information, and in cooperation with the level setter, supply the reset voltage to all of the column electrodes.

However, it is inherent to include switches in Kondoh's output unit since the column driver is capable of controlling current paths to column electrodes and thus requires a mean to connect and to disconnect the output units to the column electrodes.

Furthermore, since all column electrodes are supplied with the reset voltage by the column driver, all connections of the column driver to the column electrodes are to be completed and all switches implemented in the output unit of the column driver to be on by the time that the reset voltage are provided to the column electrodes.

Kondoh does not teach an absolute value of voltage accumulated in each pixel due to the display signal being below a predetermined value in each vertical scan period.

However, it is inherent to have a limitation on the value of an absolute combined voltage accumulated in each pixel since electronic components/parts such as transistor implemented in pixels are not operable in certain ranges of the applied voltage.

It would have been obvious to include the driving method for column and row electrodes disclosed in Kondoh in Edwards as modified by Imamura to prevent the image trailing phenomenon [*par. (0005) lines 16-22*].

Response to Arguments

6. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant's argument filed with respect to the claim limitation "*active matrix LCD*" has been fully considered but they are not persuasive.

The applicant points out that the specific configuration used in Kondoh which is an anti-ferroelectric LCD device cannot be applied to an active matrix LCD apparatus.

However, Kondoh discloses that the image trailing phenomenon, the problem to be solved by Kondoh occurs not only on anti-ferroelectric LCD but also on any other LCD apparatus employing the traditional driving method [*par. (0015) lines 10-16*].

Since the advantage provided by the driving method of Kondoh provides equivalent advantage in Edwards, it would have been obvious to modify Edwards to adopt the driving method of Kondoh.

Furthermore, the courts have held that "the test for obviousness is not express suggestion of the claimed invention in any or all of the references but rather what the

Art Unit: 2675

references taken collectively would suggest to those of ordinary skill in the art presumed to be familiar with them". In re Rosselet, 347 F.2d 847, 851, 146 USPQ 183, 186 (CCPA 1965).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seokyun Moon whose telephone number is (571) 272-5552. The examiner can normally be reached on Mon - Fri (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

2006/01/31
SM



SUMATI LEFKOWITZ
SUPERVISORY PATENT EXAMINER